

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF THE CLAIMS:

1-27 (Cancelled)

- 1 28. (Original) A method for manufacturing a
2 semiconductor device having a bipolar transistor, a
3 Schottky diode, and a resistance element formed in a first
4 region, a second region, and a third region of a
5 semiconductor substrate, respectively, said method
6 comprising the steps of:
- 7 (a) forming the bipolar transistor in the first
8 region;
- 9 (b) forming a first semiconductor layer of the
10 Schottky diode in the second region;
- 11 (c) forming an ohmic electrode of the Schottky diode,
12 electrically connected to the first semiconductor layer, in
13 the second region; and
- 14 (d) forming a Schottky electrode of the Schottky
15 diode, electrically connected to the first semiconductor

16 layer, in the second region and a resistance film of the
17 resistance element in the third region;
18 wherein in the step (d), the Schottky electrode and
19 the resistance film are made of a same layer.

1 29. (Original) A method according to Claim 28,
2 wherein in the step (d), the Schottky electrode and the
3 resistance film are simultaneously formed.

1 30. (Original) A method according to Claim 28,
2 wherein the bipolar transistor is a hetero-junction bipolar
3 transistor.

1 31. (Original) A method according to Claim 30,
2 wherein the semiconductor substrate is made of GaAs.

1 32. (Original) A method according to Claim 31,
2 wherein the Schottky electrode and the resistance film are
3 made of WSiN.

1 33. (Original) A method for manufacturing a
2 semiconductor device having a bipolar transistor, a
3 Schottky diode, and a resistance element formed in a first
4 region, a second region, and a third region of a
5 semiconductor substrate, respectively, said method
6 comprising the steps of:
7 (a) forming an emitter layer of the bipolar transistor
8 in the first region;
9 (b) forming a base layer of the bipolar transistor,
10 under the emitter layer, in the first region;
11 (c) forming a collector layer of the bipolar
12 transistor, under the base layer, in the first region, and
13 a first semiconductor layer of the Schottky diode in the
14 second region;
15 (d) forming an ohmic electrode of the Schottky diode,
16 electrically connected to the first semiconductor layer, in
17 the second region; and
18 (e) forming a Schottky electrode of the Schottky
19 diode, electrically connected to the first semiconductor
20 layer, in the second region, and a resistance film of the
21 resistance element in the third region;

22 wherein in the step (), the Schottky electrode and
23 the resistance film are made of a same layer.

1 34. (Original) A method according to Claim 33,
2 wherein the first semiconductor layer of the Schottky diode
3 and the collector layer are made of a same layer.

1 35. (Original) A method according to Claim 34,
2 wherein a separation groove is formed between the first
3 region and the second region.

1 36. (Original) A method according Claim 35, wherein
2 the bipolar transistor is a hetero-junction bipolar
3 transistor, and the semiconductor substrate is made of
4 GaAs.

1 37. (Original) A method according to Claim 33,
2 further comprising the step of:

3 (f) forming a first wiring electrically connected to
4 the emitter layer, a second wiring electrically connected
5 to the base layer, a third wiring electrically connected to
6 the collector layer, a fourth wiring electrically connected
7 to the ohmic electrode, a fifth wiring electrically

8 connected to the Schottky electrode, a sixth wiring
9 electrically connected to the resistance film, and a
10 seventh wiring electrically connected to the resistance
11 film;
12 wherein the fifth to seventh wirings are made of a
13 same material.